Increases in serum creatinine levels of greater than 1 mg per dl per day are thought to reflect hypercatabolism.[7] While creatinine production from muscle stores of creatinine is thought to be constant, increased formation has been noted in patients with muscular dystrophy.[8] It could be speculated that the high levels of creatinine occurred in this patient as a result of muscle damage and a catabolic state. Muscle studies were not done. An intriguing idea explored in this case was the possibility that the chromic acid interfered with the picric acid-creatinine complex to give a falsely elevated photometric creatinine result. Serial dilutions, however, of chromic acid serum concentrations done with a Beckman automated analyzer did not yield any false-positive values.

The unexpectedly high serum creatinine levels in this case of poisoning remain to be explained.

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Serous Adenocarcinoma of the Ovary Presenting as a Large Liver Cyst

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LIVER CYSTS are congenital, infectious or posttraumatic, but rarely are they neoplastic. The presentation of ovarian adenocarcinoma as a liver cyst has not been reported previously.

Report of a Case

The patient, a 67-year-old white woman, was admitted to the hospital for treatment of a large liver cyst. She had had a cholecystectomy seven years earlier, followed by intermittent pressure-type pain in the right upper and lower quadrants. Four months before admission, increased abdominal pain developed, associated with shortness of breath, vomiting and temperature to 39.4°C (103°F). A month later she had gradual abdominal swelling and radiation of her pain to the back and sternum. She was admitted to another hospital, where ultrasonography and computed tomography (CT) of the upper abdomen (Figure 1) showed a large subcapsular cystic mass in the right lobe of the liver. Percutaneous aspiration returned 1,500 ml of serosanguineous fluid upon which cytology and bacterial culture were negative. The fluid reaccumulated over two weeks, and bilateral pleural effusions developed. Visceral angiography determined that the large mass in the right lobe of the liver was avascular. Specimens of lung and liver biopsies, thoracentesis and cyst aspirate showed no malignancy or bacteria (aerobic, anaerobic, mycobacterial or fungal). The patient was transferred to the University of California, Los Angeles, Medical Center.

She said that she had not had jaundice, weight loss or anorexia. She had traveled to Tijuana for one day one year earlier. She had consumed alcohol heavily in the remote past but had never used birth control pills or estrogens. There was no history of significant abdominal trauma. The family history was positive for gastric cancer.

On examination she appeared anicteric but chronically ill. Breath sounds were decreased at both lung bases. The cardiac examination was normal. The abdomen was distended, with a tense mass in the right upper quadrant obscuring the liver edge and extending 8 cm below the costal margin. There was no splenomegaly.

Her hemoglobin was 10 grams per dl, with a normal leukocyte count and differential. Electrolyte, glucose and creatinine levels and coagulation studies were normal. Other laboratory values were as follows: bilirubin 0.4 mg per dl, aspartate aminotransferase 50 U per liter, alanine aminotransferase 71 U per liter, and alkaline phosphatase 1,185 IU per liter (normal < 106). A urinalysis showed 3 to 6 erythrocytes and 60 to 80 leukocytes. A chest radiograph showed bilateral pleural effusions, right more than the left, and an electrocardiogram was normal.

At operation, the right lobe of the liver was displaced posteromedially by a huge unilocular liver cyst. The left lobe was normal, and the common duct was exposed and appeared patent. On abdominal exploration there was bilateral ovarian enlargement, with the left ovary measuring 5 cm and the right 3 cm. Salpingo-oophorectomies were done, and frozen sec-

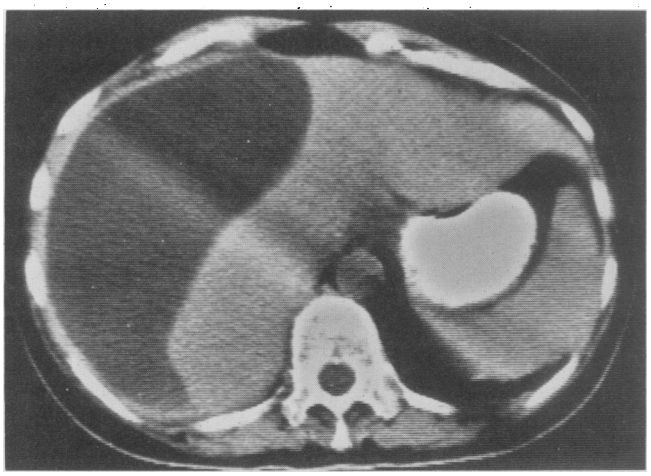

Figure 1.—A computed tomographic scan of the upper abdomen shows a large cystic mass contiguous with the right lobe of the liver.

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tions showed serous tumors of borderline malignancy with involvement of serosal surfaces. A total of 1,800 ml of dark greenish-brown fluid with some necrotic debris was drained from the cyst, and a frozen section study of the cyst wall was interpreted as benign columnar epithelium. Because of concern that the discolored fluid indicated a biliary tract communication, a Roux-en-Y cystojejunostomy was constructed for drainage.

Specimens of the cyst fluid and wall were negative for mycobacterial stains, amebic, fungal and echinococcal titers, parasites, bacteria, carcinoembryonic antigen and α-fetoprotein. The final pathologic diagnosis of the ovaries was grade I papillary serous adenocarcinoma. On permanent sections, the cyst wall (Figure 2) showed metastatic carcinoma of the same type. Peritoneal washings taken during the operation were also positive for adenocarcinoma.

She did well postoperatively and was treated with eight cycles of cisplatin, doxorubicin (Adriamycin) hydrochloride and cyclophosphamide. A second-look laparotomy was done one year after her first operation. There was no macroscopic evidence of disease in the pelvis or abdomen, but biopsies and washings from omentum, pelvis and paracolic gutters were positive for microscopic tumor. She was treated with a course of tamoxifen citrate and remains well six months following this surgical procedure.

Discussion

Cystic disease of the liver is classified as congenital or acquired. The congenital types are of parenchymal or ductal origin,[1] and the acquired types are usually infectious, posttraumatic or neoplastic.[2,3] The most common presentation is an abdominal mass; symptoms of pain and distention occur in a minority of patients. Diagnosis, once difficult preoperatively, now is best made by ultrasonography or computed tomography; these modalities also allow for guided aspiration of cyst contents in properly selected cases. Characterization of the fluid as clear, serosanguineous, bilious or purulent is important preoperative information and may assist the surgeon in planning the operative strategy.[4] The preferred surgical treatment is excision of the cyst if feasible. Cysts that because of size or location cannot be excised completely should be unroofed and allowed to drain into the peritoneal cavity in the absence of biliary tract communication. Those that contain bile should be drained via a Roux-en-Y cystojejunostomy.

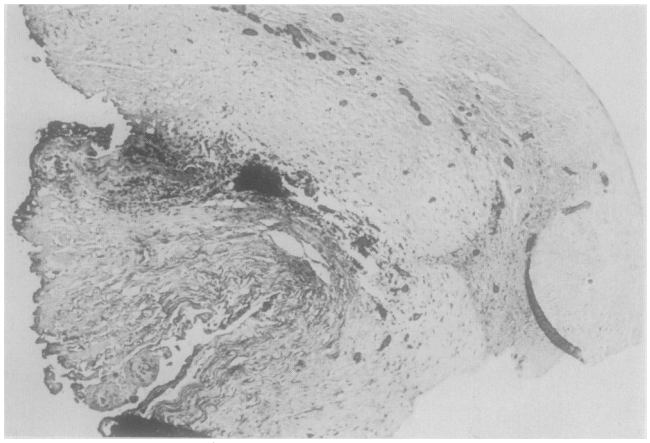

Figure 2.—Microscopic section of the liver cyst wall shows a fibrous structure with a fragmented lining and minute papillary projections (original magnification × 50; hematoxylin and eosin stain).

Fewer than 1% of nonparasitic cysts are neoplastic.[2] These are usually hamartomas, cystic hepatomas or cystadenocarcinomas. The intraoperative diagnosis of the last type by frozen section may be inaccurate, and Wellwood and associates[3] have suggested that the diagnosis of malignancy is best made at an operation based on macroscopic features of the cyst, such as an irregular papillary lining.

Metastatic spread from ovarian carcinoma is usually to the diaphragm, para-aortic nodes, omentum and peritoneal spaces.[5] Liver involvement is generally a late finding. Even tumors of so-called borderline malignancy may spread transperitoneally, but, again, the liver is a rare target.

Our patient presented with cystic liver metastasis from a well-differentiated papillary serous adenocarcinoma of the ovary. A search of the literature has not yielded a previous report. An alternative hypothesis that the findings might have represented metastatic spread to a congenital cyst is untenable since the cyst was not present at the earlier cholecystectomy. It would seem prudent to scan the lower abdomen and pelvis during CT or ultrasound evaluation of a cystic liver mass in a woman susceptible to ovarian neoplasia.

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Lymphangitic Cutaneous Metastases From Lung Cancer Mimicking Cellulitis

Carcinoma Erysipeloides

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CUTANEOUS METASTASES from solid internal cancers usually present as nodular tumors.[1] We recently saw a patient with adenocarcinoma of the lung in whom an unusual cutaneous tumor infiltrate developed that clinically mimicked a cellulitis.

Report of a Case

The patient, a 45-year-old man, presented in March of 1983 with dyspnea, weight loss and back pain. He was a heavy cigarette smoker. On physical examination he had de-

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